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1. WHAT IS CLAIMED IS:

2. A selective polarization matching filter comprising:  
 3. a filter housing formed of a first material;  
 4. a replicate property matching material disposed encapsulated within  
 5. said filter housing; and  
 6. a pair of substantially parallel plates disposed encapsulated within  
 7. said filter housing on opposite sides of said replicate property matching material,  
 said plates being formed of a second material different from said first material.

1. 2. A selective polarization matching filter according to claim 1, further  
 2. comprising a pair of grounding leads disposed coupled to said plates,  
 3. respectively, and extending to an exterior of said filter housing.

1. 3. A selective polarization matching filter according to claim 1,  
 2. wherein said first material is a polymer, said second material is a polymer  
 3. different from said first material, and said replicate property matching material is  
 4. a dielectric material.

1. 4. A selective polarization matching filter according to claim 3,  
 2. wherein said first material is polyurethane.

1. 5. A selective polarization matching filter according to claim 4,  
 2. wherein said second material is acrylonitrile-butadiene-styrene.

1. 6. A selective polarization matching filter according to claim 5,  
 2. wherein said replicate property matching material is selected in accordance with  
 3. dielectric polarization characteristics of <sup>the</sup> a to-be-detected entity.

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1           7.     A selective polarization matching filter according to claim 6,  
2     wherein said replicate property matching material comprises one of nano-  
3     structured human keratin protein polymer, nano-structured animal keratin protein  
4     polymer, or a polymer blend.

1           8.     A selective polarization matching filter according to claim 3,  
2     wherein said second material is acrylonitrile-butadiene-styrene.

1           9.     A selective polarization matching filter according to claim 3,  
2     wherein said replicate property matching material is selected in accordance with  
3     dielectric polarization characteristics of <sup>the</sup> ~~a~~ to-be-detected entity.

1           10.    A selective polarization matching filter according to claim 9,  
2     wherein said replicate property matching material comprises one of nano-  
3     structured human keratin protein polymer, nano-structured animal keratin protein  
4     polymer, or a polymer blend.

1           11.    A selective polarization matching filter according to claim 1,  
2     wherein said first material is a polymer, said second material is metal, and said  
3     replicate property matching material is a conducting material.

1           12.    A selective polarization matching filter according to claim 11,  
2     wherein said first material is polyurethane.

1           13.    A selective polarization matching filter according to claim 12,  
2     wherein said second material is one of copper, brass, aluminum and steel.

1 14. A selective polarization matching filter according to claim 13,  
 2 wherein said replicate property matching material is selected in accordance with  
 3 *A* dielectric polarization characteristics of <sup>*the*</sup> ~~a~~ to-be-detected entity.

1 15. A selective polarization matching filter according to claim 14,  
 2 wherein said replicate property matching material is one of gold, silver, platinum,  
 3 palladium or iron.

1 16. A selective polarization matching filter according to claim 1,  
 2 wherein said replicate property matching material is selected in accordance with  
 3 *A* dielectric polarization characteristics of <sup>*the*</sup> ~~a~~ to-be-detected entity.

1 17. A selective polarization matching filter according to claim 16,  
 2 wherein said replicate property matching material is one of nano-structured  
 3 human keratin protein polymer or nano-structured animal keratin protein  
 4 polymer.

1 18. A selective polarization matching filter according to claim 16,  
 2 further comprising an auxiliary attachment containing one of 2-propanol or  
 3 2-methyl-2-propanol operatively cooperating with the filter.

1 *See* 19. A selective polarization matching filter comprising:  
 2 *A2* a filter housing formed of a replicate dielectric property matching  
 3 material, said filter housing defining a cavity therein having a pair of exit ports;  
 4 a dielectric material disposed in said cavity, said dielectric material  
 5 being different from said replicate dielectric matching material; and  
 6 a pair of conducting inserts disposed in said exit ports, respectively,  
 7 said conducting inserts extending to an exterior of said filter housing.

1           20.    A selective polarization matching filter according to claim 19,  
2           wherein said dielectric material disposed in said cavity is air.

1           21.    A selective polarization matching filter according to claim 19,  
2           further comprising an auxiliary attachment containing one of 2-propanol or  
3           2-methyl-2-propanol operatively cooperating with the filter.

1 *Sub* ~~22.~~   A selective polarization matching filter comprising a composition of  
2 *A3* materials configured to generate an opposite polarization pattern based on a  
3 polarization pattern of a to-be-detected entity.

1           23.    A selective polarization matching filter according to claim 22,  
2           wherein said composition of materials comprises a replicate property matching  
3           material selected in accordance with dielectric polarization characteristics of the  
4           entity to be detected.

1           24.    A selective polarization matching filter according to claim 23,  
2           wherein said composition of materials further comprises at least one dielectric  
3           material.

1           25.    A selective polarization matching filter according to claim 22,  
2           wherein said composition of materials comprises acrylonitrile-butadiene-styrene  
3           (ABS) disposed encapsulated in polyurethane.

1           26.    A selective polarization matching filter according to claim 25,  
2           wherein said composition of materials further comprises a replicate dielectric  
3           property matching material disposed encapsulated in said polyurethane and  
4           enclosed by said ABS.

1 *Sub*  
 2 *A* ~~27.~~ A method of manufacturing a selective polarization matching filter  
 3 comprising assembling a composition of materials to generate an opposite  
 polarization pattern based on a polarization pattern of a to-be-detected entity.

1 28. A method according to claim 27, wherein said assembling step  
 2 comprises encapsulating a replicate property matching material selected in  
 3 accordance with dielectric polarization characteristics of the entity to be detected  
 4 in a dielectric material.

1 29. A method according to claim 28, wherein the assembling step  
 2 further comprises encapsulating a pair of substantially parallel plates in the  
 3 dielectric material and enclosing the replicate property matching material with the  
 4 plates.

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